

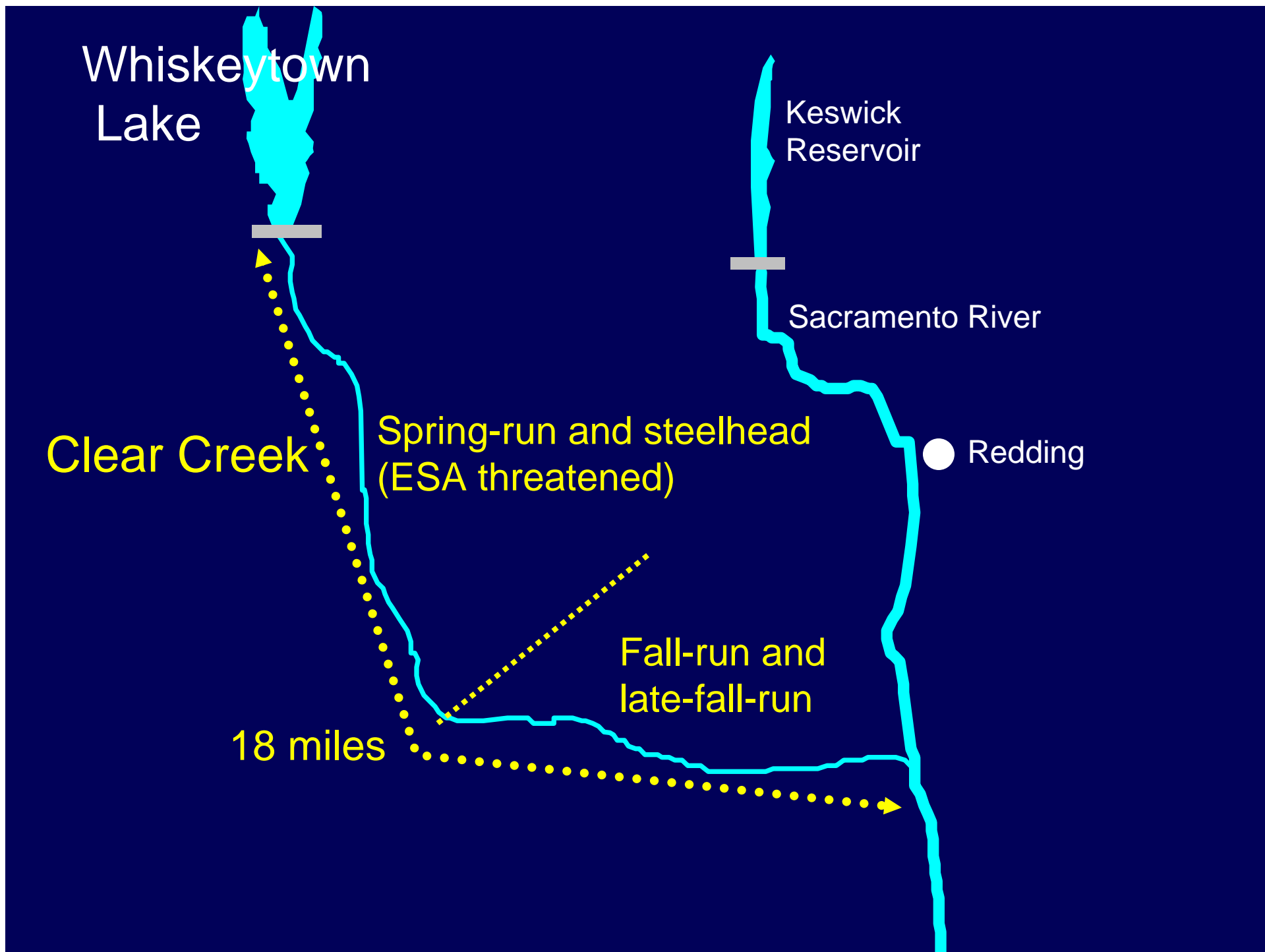
A photograph of a shallow, clear creek with a rocky bed. A small, dark-colored fish is visible in the water, swimming towards the right. The water is clear, revealing the numerous small, light-colored stones and pebbles on the creek bed. In the background, there are some green plants and trees along the bank.

CLEAR CREEK RESTORATION

3406 (b)(12)

Matt Brown, FWS
530-527-3043

Jim De Staso, Reclamation
530-276-2046



Clear Creek Funding Sources

Total expenditures \$21.0 million since 1995

<u>Program</u>	<u>Expenditures (mil)</u>	<u>Percent</u>
CVPIA	9.7	46
CALFED	9.4	45
Other Federal	1.7	8
Local	0.2	1

Program Goals

**Clear Creek Fish Restoration
mandates habitat restoration projects**

Passage

Erosion

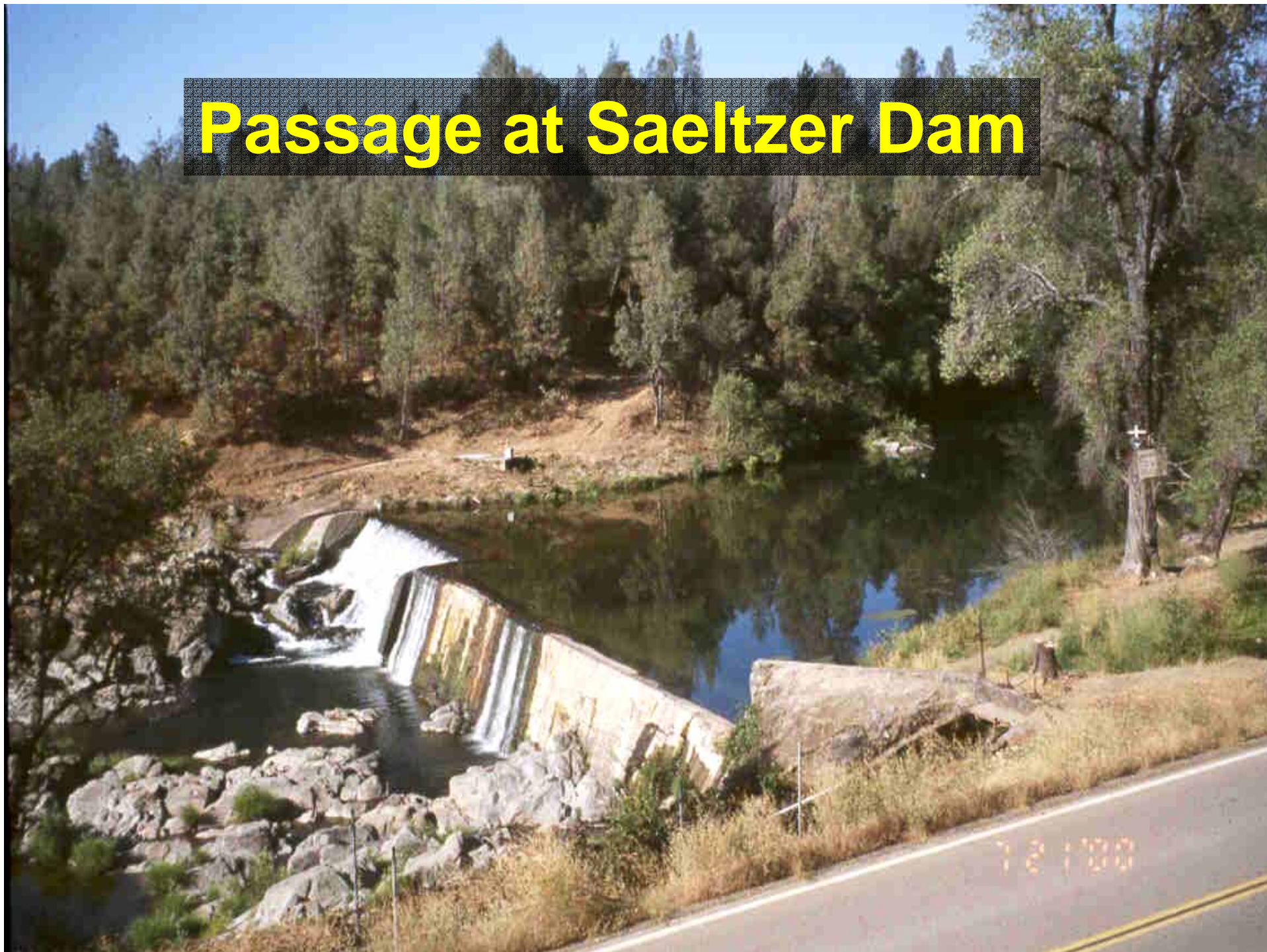
Channel restoration

Gravel

Flows

Adaptive management / monitoring

Passage at Saeltzer Dam

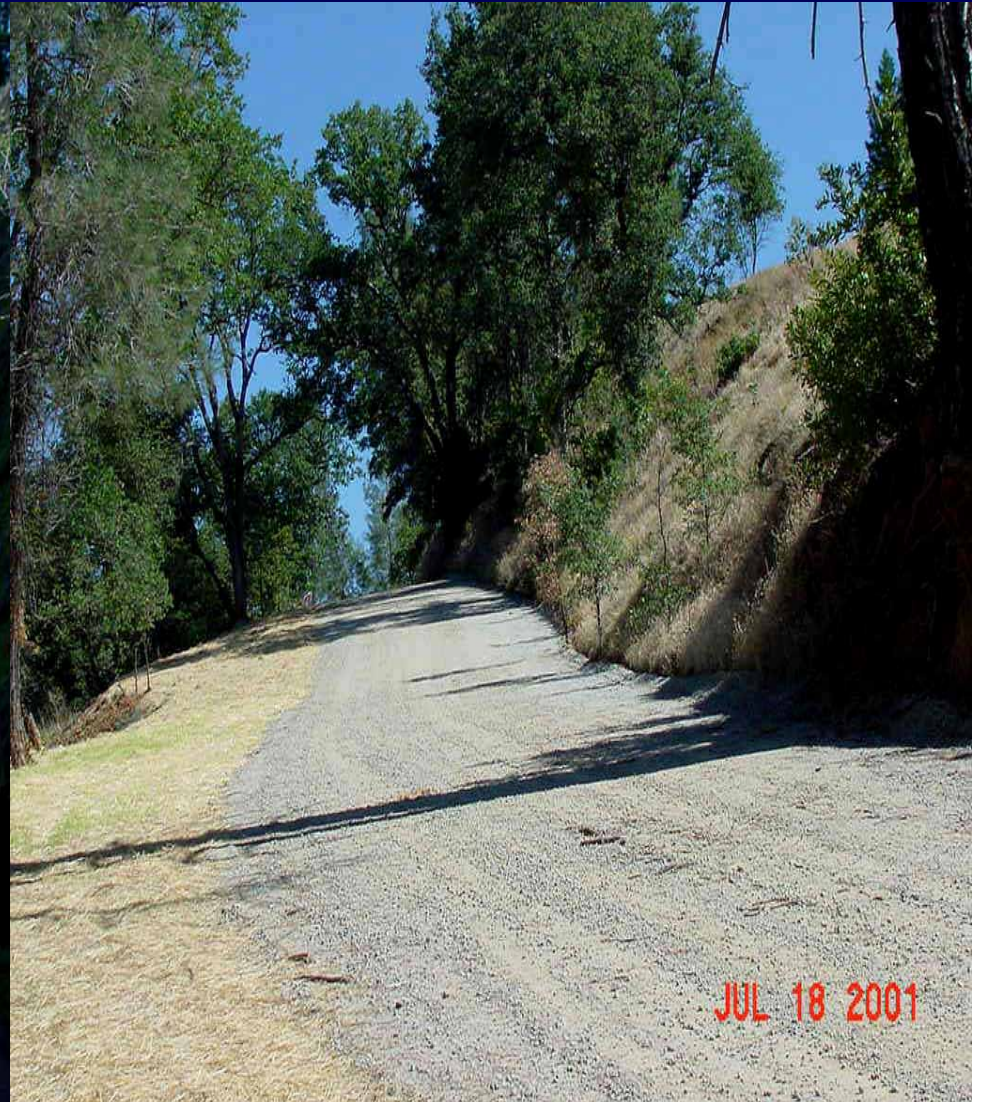


Completed in October 2000



DEC 19 2000

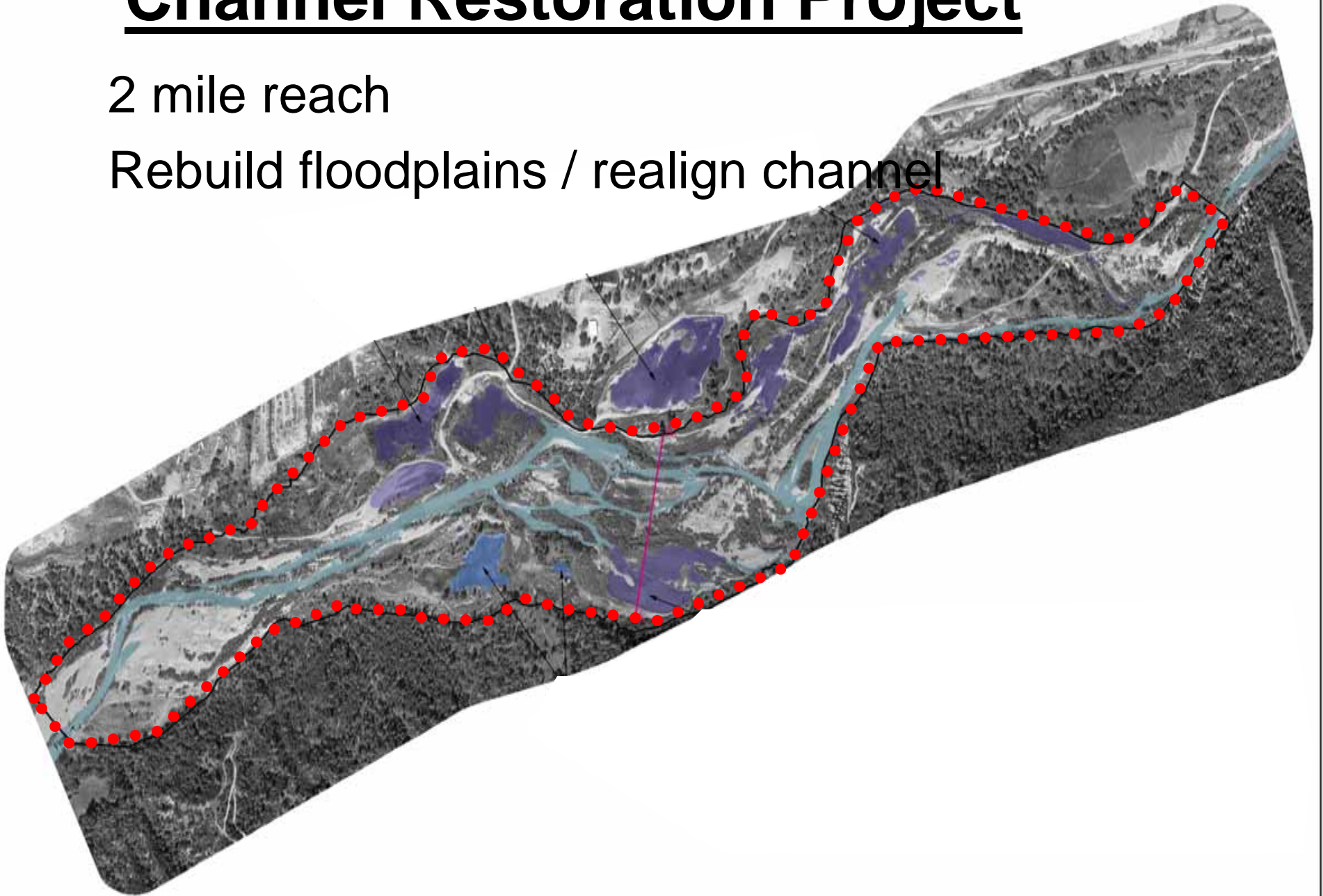
Erosion Control Completed



Channel Restoration Project

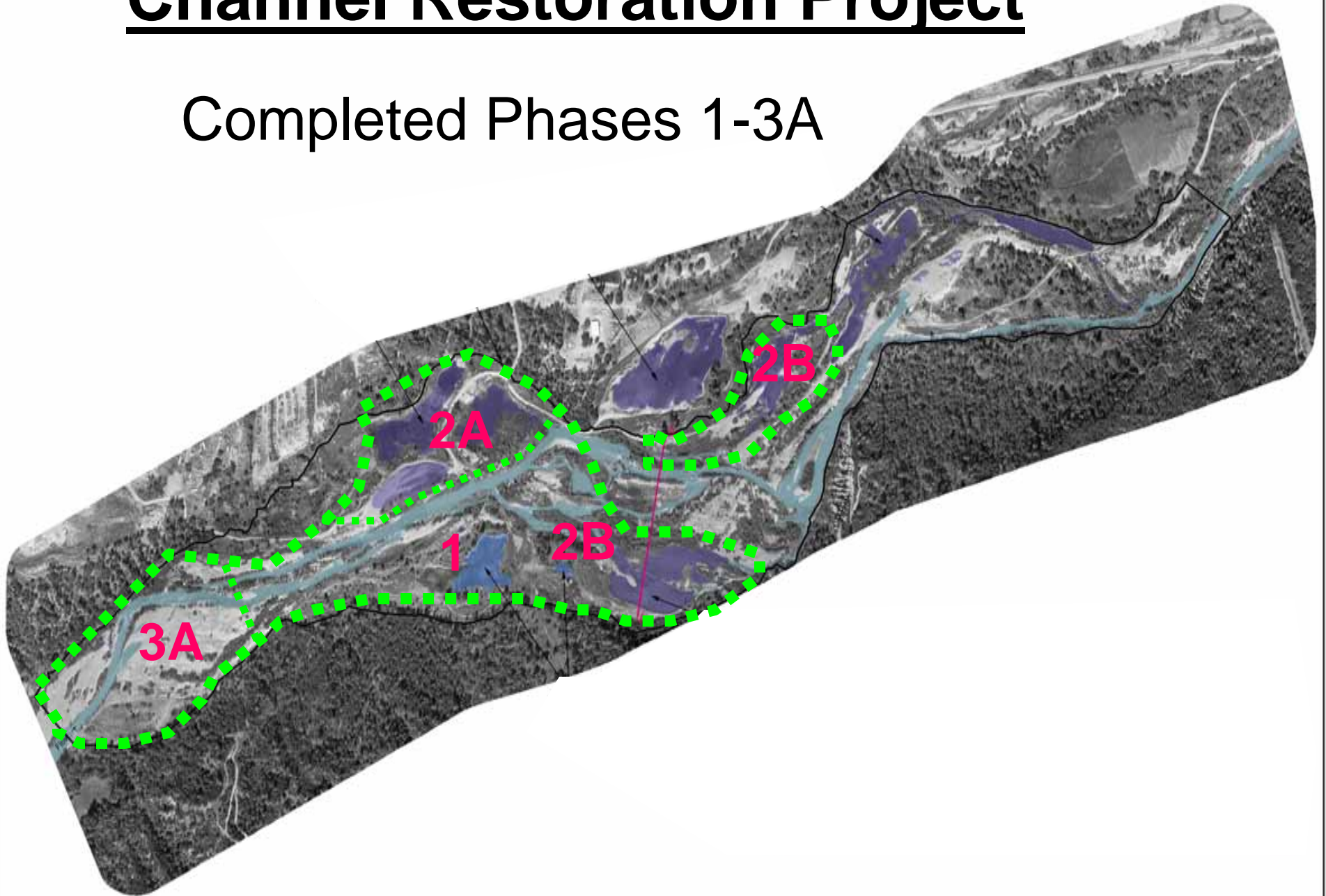
2 mile reach

Rebuild floodplains / realign channel



Channel Restoration Project

Completed Phases 1-3A



Channel Restoration Project

Old alignment

**Complete Phase 3A
Summer 2002**



Channel Restoration Project

Phase 3A

342 % increase in use of spawning habitat

Highest densities of juvenile rearing

Sept 2002



May 2004



Spawning Gravel Additions

82,700 tons - \$1.2 million



Monitoring

- Fish: adult counts
juvenile counts, stranding
- Spawning gravel
- Geomorphic characteristics
- Riparian revegetation
- Birds



Program Goals (1996 to present)

Passage - Completed

Erosion - Completed

Channel – 4 phases completed
one or two phases to complete

Gravel – in perpetuity

Flows – IFIM started in FY 2004

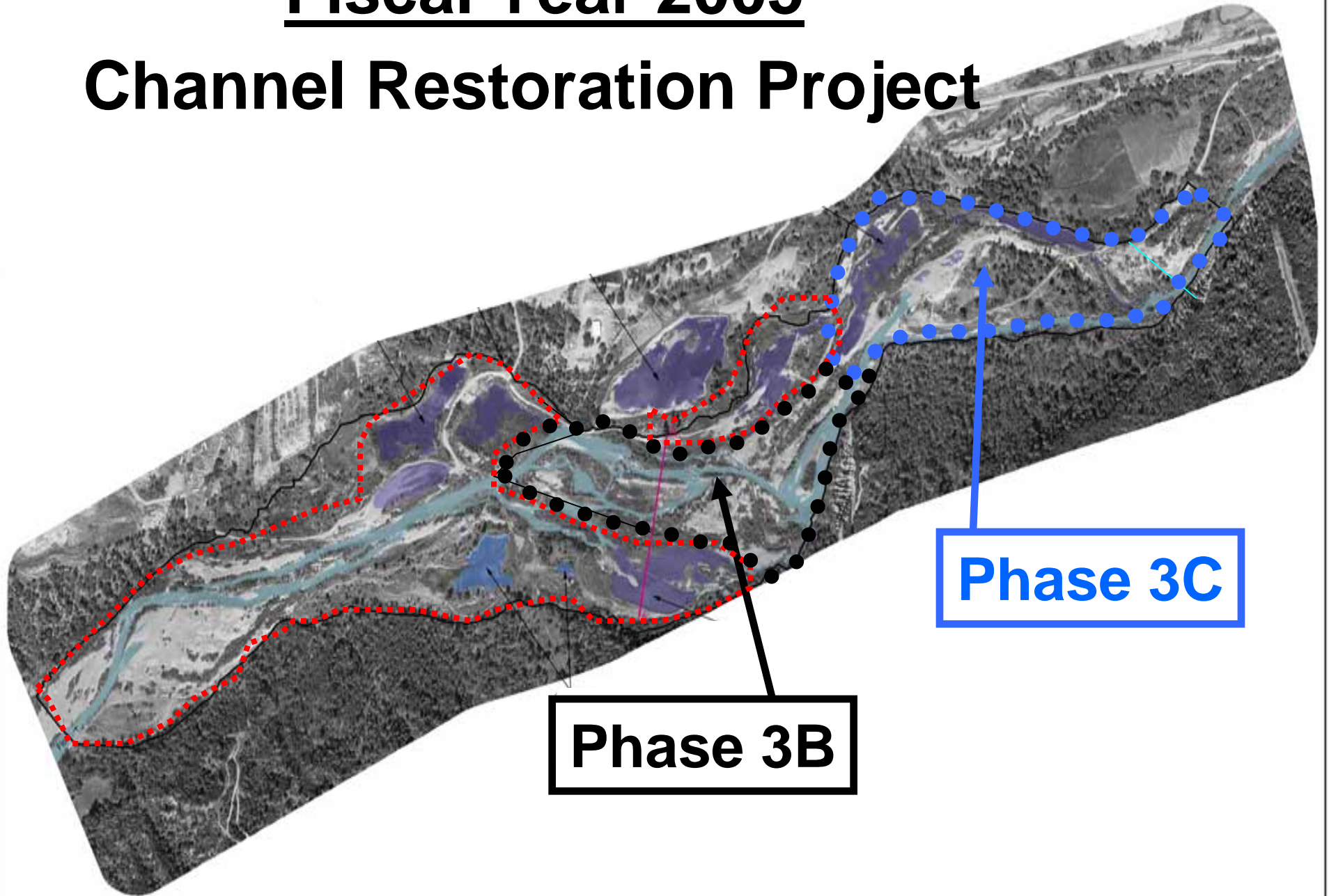
Monitoring – Ongoing

Fiscal Year 2005 Budget

Restoration Fund: \$800,000

Reclamation WRR: \$0

Fiscal Year 2005 Channel Restoration Project



Fiscal Year 2005

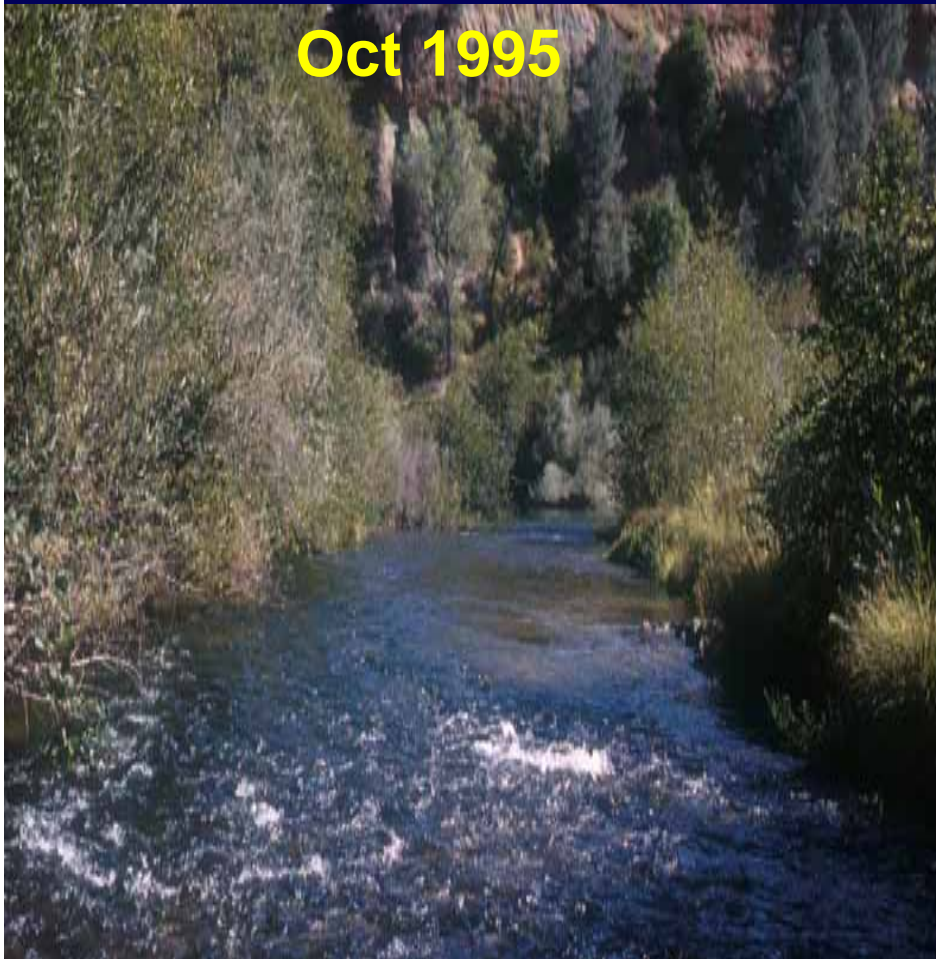
Channel Restoration Phase 3B

CALFED considers 3B a Directed Action

Currently being designed (\$97,000 CVPIA)

Fiscal Year 2005

Channel Restoration Phase 3B
Severe headcutting is occurring



Fiscal Year 2005

Spawning gravel management / addition:

CVPIA \$206,000

**Inject at Whiskeytown Dam, Dog Gulch,
and NEED Camp (\$140,000)**

Continue Gravel Management Plan (\$24,000)

**Fund ESSA for gravel transport model (\$42,000)
Monitoring continues**

Fiscal Year 2005

Interim Base Flows:

October - June: 200 cfs

July - September: ~ 75 cfs
(temperature control at Igo)

Fiscal Year 2005

IFIM

Determine long-term
flow requirements

Conducted by the FWS Sacramento
Red Bluff field support of \$69,000



Fiscal Year 2005

CALFED Environmental Water Program Clear Creek Geomorphic Flow Project

Large scale adaptive management flow experiment

4,000-6,000 cfs, for 2 to 3 days, 3 times over ten years

Reactivate geomorphic processes to re-create and maintain the diverse habitats in Clear Creek

Fiscal Year 2005

CALFED Environmental Water Program Clear Creek Geomorphic Flow Project

Re-operate Whiskeytown Dam to produce a glory hole spill

Reclamation & ESSA analyzing dam safety and flood risks.

Conceptual proposal reviewed by 3 panels: ERP, related water management program staff, and independent scientists.

Preparation of a full proposal, expected to take 18 months

Fiscal Year 2005

Monitoring

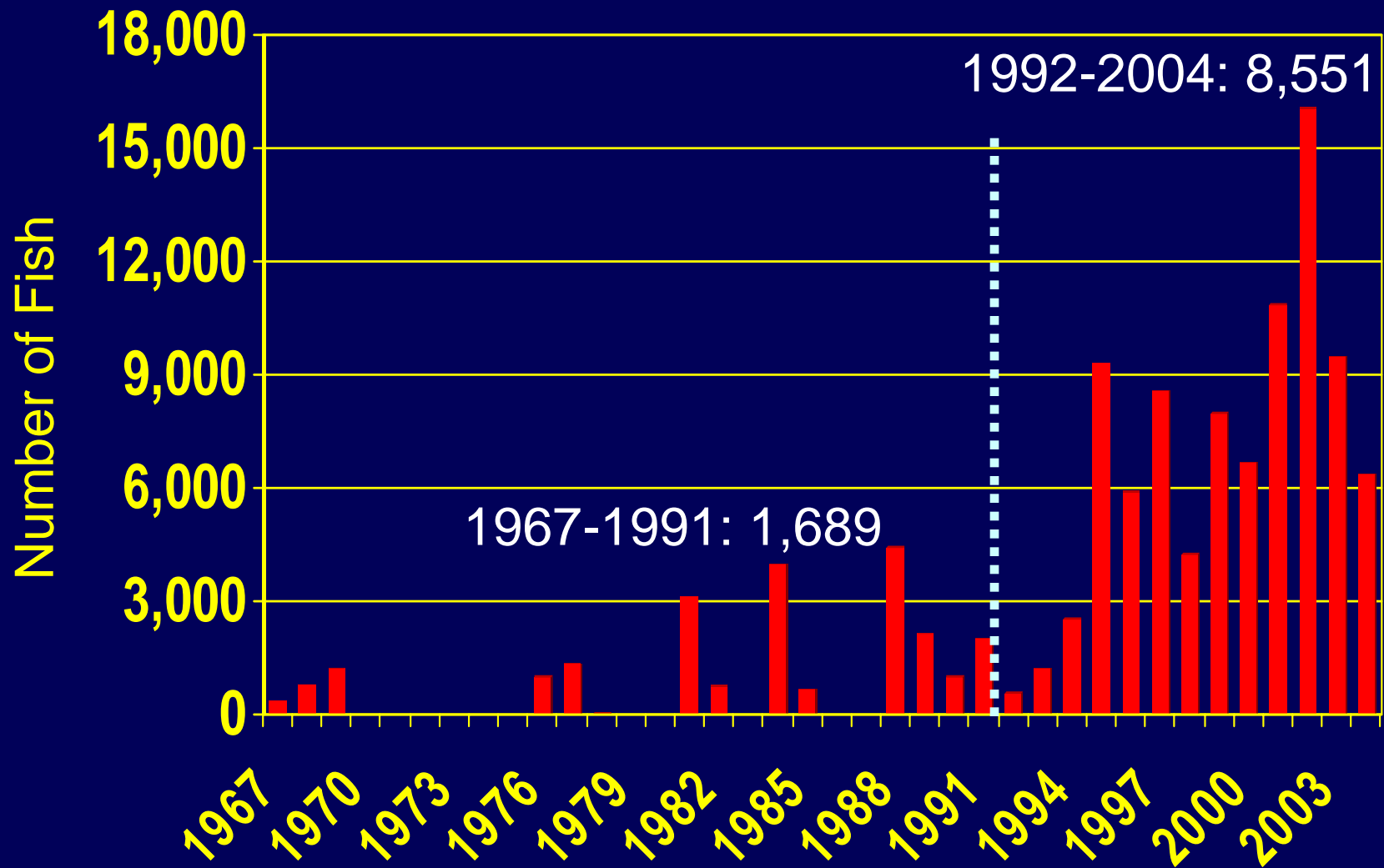
Fish and geomorphic monitoring
\$339,000 funded by CVPIA

Geomorphic, fish, vegetation and bird
monitoring funded by CALFED

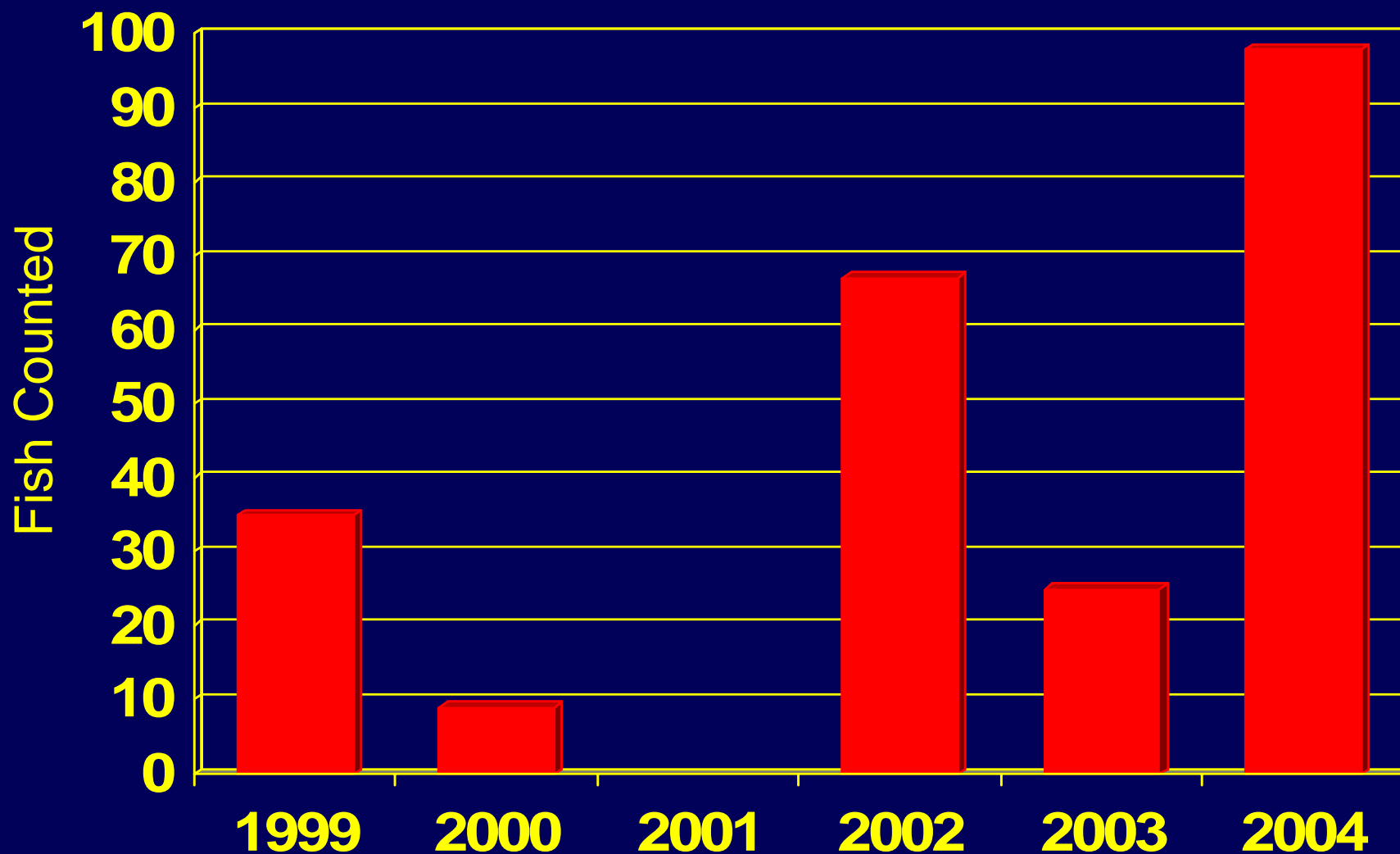
FWS CVPIA Monitoring

- Adult Spring Chinook and steelhead
- Habitat use by juvenile fish
- Spawning area mapping
- Fish stranding on floodplains
- Procure and operate barrier weir
- Chinook genetics
- Sediment evaluation
- Stream channel morphology

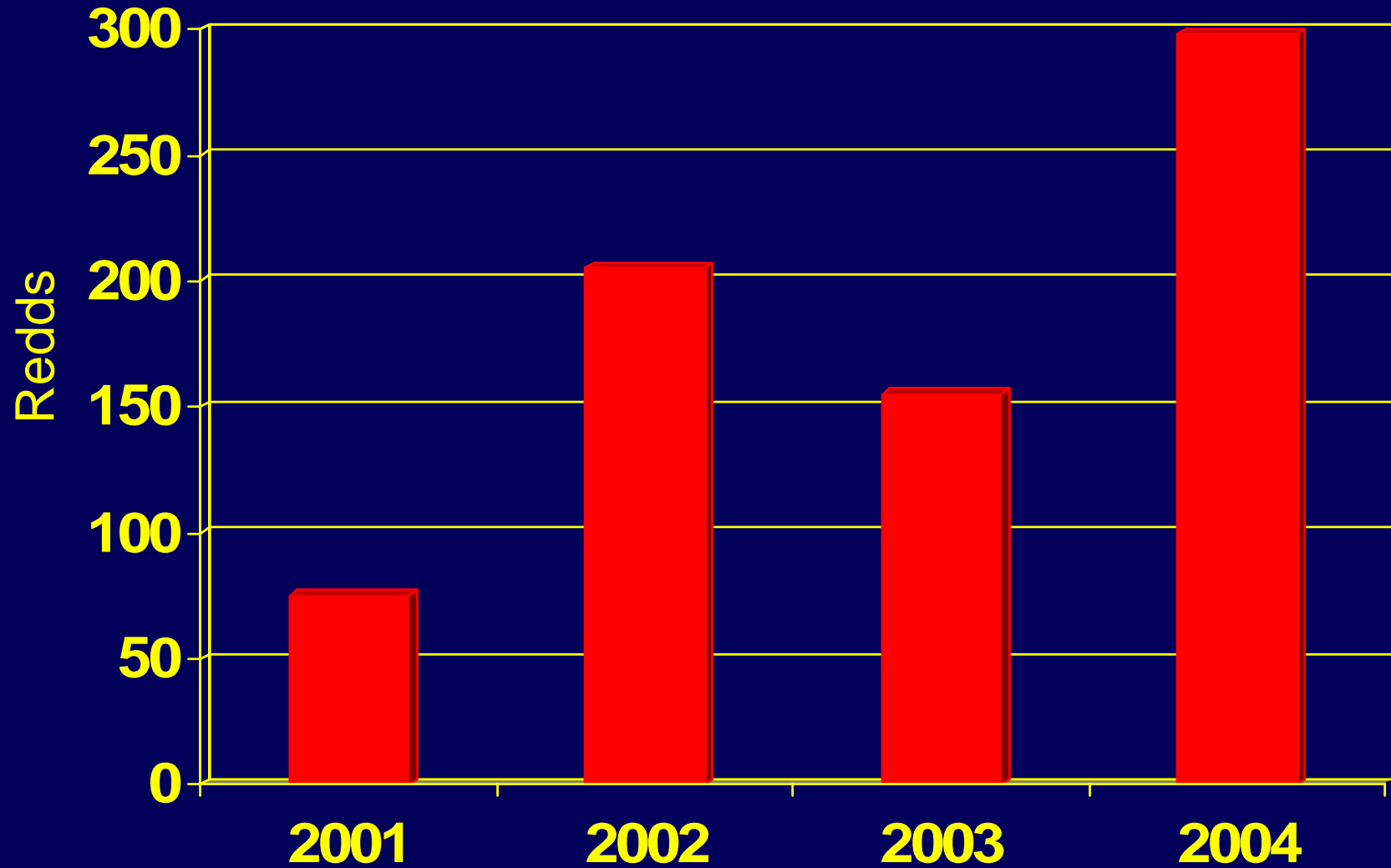
Fall-Run Chinook Salmon Escapement



Spring-Run Chinook Counted in August



Steelhead Redds Counted



What's Left To Be Done

Channel restoration - Implement 3B in summer 2006
Assess need for 3C

Gravel - in perpetuity, ~\$500k until 2015, then ~\$200k

Flows - in perpetuity, IFIM through 2009, EWP

Monitoring - \$1.0 mil until 2010, then \$500 k

